



ARRL Member
Club Since 1974

The monthly Newsletter of the South Bay Amateur Radio Association Fremont, Ca.

Primavera Bicycle Ride 2010 — Thank you SBARRA

16 Hams from SBARA provided communication support for the 2010 Fremont Freewheelers Primavera Bicycle event. We provided operators at all 5 rest stops, Ed Levin, Sunol, Waterstop (Greenville Rd and 580), Garré Winery in Livermore, Palo Verde (at the north end of Palomares) and the start/finish at Logan High School in Union City. We also had operators in 9 SAG vehicles.

I want to thank everyone who helped: Ray Wong KE6OGM, Florence Wong KF6GAH, Dick Gorringer WA6STR, Joann Wood WV6RQT, Bernhard Hailer AE6YN, Steve Wilson KG6HJU, Al Rendon WT6K, Andy Mascsak WD6CJK, Umesh Ghodke K6VUG, Joe Peterson KE6YHG, Nancy Peterson KF6HOI, Egbert Vallecillo KI6FIU, Rudy Kelly KI6VMU, Brian Krause AD6MG, Sarah Prelutsky N6SNP and Tony Flusche AB6BR.

I also want to thank the K6LRG group for the use of their 147.045 repeater and W6MLP for the use of their 145.43 repeater.

For more information about the Fremont Freewheelers and Primavera visit their web page: <http://www.ffbc.org>

No matter how much you push the envelope, it'll still be stationary.

Web Page: <http://www.qsl.net/ab6br>

Tony Flusche AB6BR

May Meeting Raffle Details

SBARA May Raffle

Top Prizes

3rd Prize: Maglite LED set

2nd Prize: 5-piece Micro-Tool set

1st Prize: TOMTOM XL 330-S Wide-screen GPS Navigation System with text-to-speech.

See you at the SBARA Meeting....Robin.



Special Interest...

- Primavera Thank You
- Fieldday Plans
- 10 Meter Dipole for HF

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SBARA's Groundplane

Tax or Test?

Tax or Test?

Death and taxes are often mentioned as the only two certainties in life. When Bernhard AE6YN and I planned our second Tri-City VE Group session for the evening of Thursday, April 15, many eyebrows raised, foreheads wrinkled, and heads shook with discouragement. We were warned that people might be otherwise engaged.

We're delighted to report otherwise. When you want to get your license or upgrade, you take care of your taxes first. At least that's what happened for the twelve stalwart candidates who braved the rush hour traffic and delayed their dinner hour. Their planning paid off because everyone left with a CSCE.

Six new volunteers assisted in VE activities. We added two new positions - Runner and Forms Czar - and switched people around in order to learn new tasks. Congratulations to all the volunteers for making a difference for twelve hams.

Saturday, May 8th will be our third session and we're amassing the learning from the last one. Volunteers will be shuffled again and process refinements will continue. So, spread the word and help put the Tri-City VE Group in Fremont on the map. We know you'll want to get your upgrade before Field Day. Our team looks forward to seeing you!

Rita Derbas KI6SSQ

Livermore SWAP Meet Information

Reminder:

The May LARK, Livermore SWAPMEET will be held on **Sunday; May, 9th 2010.**

This will be the second Sunday of the month.

In June 2010, the swap will return to the 1st Sunday of the month.

(Weather Permitting)

This change is necessary because of a schedule conflict with the park.

We will be needing volunteers to help with the swap. Contact one of the Co-Chairs if you can spare some time on Sunday.

(NO SWAP IN JULY 2010)

SBARA's Groundplane

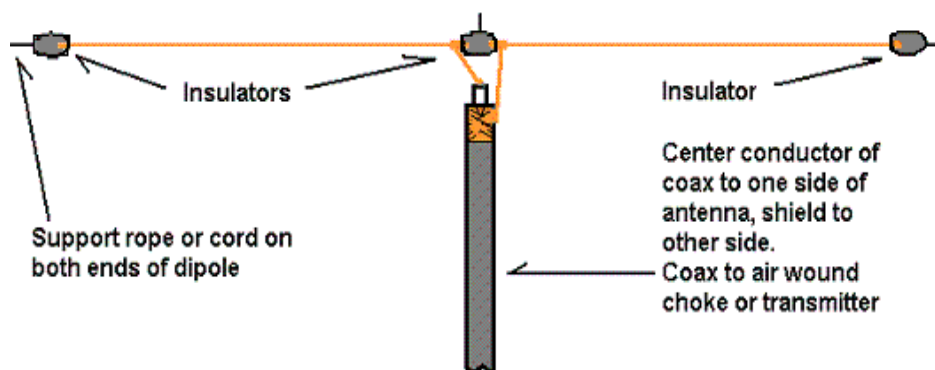
Build a 10 Meter Technician Class Dipole

This 10 meter dipole project will enable you to start using your new HF privileges as a Technician class operator on 10 meter SSB between 28.300mhz and 28.500mhz.

It is a half wave dipole designed for the center frequency of 28.400mhz but should cover most of this 200khz spread with low SWR. This project shows the 10 meter dipole in the horizontal configuration but may also be installed in the inverted V fashion.

Since any dipole is considered a balanced antenna, it should be used with an air wound choke to help eliminate rf on the coax. See the "[Ugly Balun Project](#)" for instructions on how to build one from coax.

Building the 10 meter dipole is very easy and simple construction is used with very inexpensive materials you may already have laying around the shack. See drawing below:



N4UJW

It consists of 2 equal lengths of #12 or #14 wire insulated in the center and on each end and supported with rope, nylon cord, etc from both ends and the center if needed.

The insulators can be homebrewed from any non-conductive material that will withstand the rigors of mother nature such as glass, plexiglass, painted wood, pvc, heavy plastic, commercially made insulators, etc. The center insulator actually can be used as a dual purpose device, both for support at the center and to prevent the two outer radiators from touching. It should be made heavier and a bit larger to handle the weight of the entire antenna, coax and support ropes. Remember that it contains all connections to the antenna and some method must be used to secure them from separating from each other due to wind load, etc such as plastic wire ties to eliminate strain on the coax end.

The center support rope at the insulator may not be needed depending on how much the completed assembly droops when put up between the end supports. **Don't suspend it between trees unless some method is used on the ends to prevent tension from breaking the wire if the wind blows.**

SBARA's Groundplane

2010 SBARA Field Day Plans Moving Forward

Field Day

Mark your calendar for **June 25th, 26th, and 27th** for this year's **Field Day Emergency Communications exercise**. Our motto this year is "Lets work together" to improve our local community emergency communications preparedness.

The first Field Day took place in 1934 and was sponsored by the ARRL as it still is today. The object is to practice quickly setting up our radio equipment and seeing how many other Field Day stations we can contact. All equipment must be operated from emergency power such as gas generators or batteries.

This year SBARA will once again be setting up for Field Day in Central Park and will be operating on 10M, 15M, 20M, 40M and 80M during the weekend. As is traditional,

we will have a group dinner Saturday at 5:30PM for all the participants, their family and friends.

Starting on Friday the 25th, participants will begin setting up the tents and station equipment and antennas for the 24 hours of operation that begins Saturday the 26th at 11:00AM. Teardown begins on Sunday at 11:00AM and participation in the setup and teardown are important parts of the learning process in preparedness for real emergencies.

Everyone is invited to get involved. If you want to set up a battery powered QRP station or setup on the VHF/UHF bands you will be accommodated at the SBARA field Day. Just speak up and let Al Rendon (wt6k@arrl.net) know your desires. Remember, this is an exercise in Emergency Communications first and foremost.

Field Day Promo Video

Watch
these
Exciting
Videos



SBARA's Groundplane

Build a 10 Meter Technician Class Dipole (cont'd.)

It is fed with standard 50 ohm coaxial cable, from the center of the dipole with the center conductor attaching to one side of the dipole and the shield of the coax to the other side. The type of coax is up to you but the larger coax like RG8 will give a bit less loss depending on feed line length.

The coax should come away from the dipole at a 90 degree angle to the wire if at all possible when tuning and in the final installation.

It does not matter which side is connected at the coax just as long as neither side of the antenna is shorted to the other side, hence, the insulator in the middle. Seal all connections at the coax end where it connects to the antenna including the end of the coax. This keep water out.

From the antenna, the coax should go to an air wound choke AT the antenna as mentioned above using the same coax that would go to the transmitter.

NOTE: Rather than have connectors at each end of the air choke, just make the feed line coax about 18 to 21 feet longer than needed to reach from the transmitter to the antenna and then wind your coil on the form and attach to the antenna.

NOTE! It is always better to start LONGER with each half of the dipole than the formula results below! No two antennas will perform the same in all locations with the formula! It is much easier to cut than add wire to a dipole.

$468 / \text{freqmhz} = \text{total length in feet:}$

Example,

$468 / 28.400\text{mhz} = 16.478 \text{ feet (total length end to end in feet)}$

Round off 16.478 feet to about 17 to 18 feet **total length, end to end**, for swr tuning.

Don't forget to feed it in the exact center giving you 2 equal legs on each side of the center insulator.

Do not attempt to tune the antenna on the ground! It must be raised to it's final operating height for tuning! If you have an MFJ 259B analyzer or equal, your tuning will be much quicker and you can do it off the air!

After you have built the antenna, raise it to the final operating height, (the higher the better), tune your transmitter to 28.400mhz, listen for unused frequency and using the AM, CW or tune mode with very little power, (just enough to get a reading on your SWR meter), transmit your call sign and say testing; (here again assuming you have a clear frequency).....immediately check SWR, say you're call sign again and "Test clear, unkey, trim short equal amounts from each end, again listen for unused frequency, and repeat on the air "Testing" with your call sign, key up, check SWR again, unkey, repeat as needed for lowest SWR on 28.400mhz so you will be centered in the Tech portion of the band. Once you have tuned it for lowest SWR, make certain you have all supports firmly tied down and your ready for some fun on 10 meter SSB!

Added notes of interest:

If the dipole is installed in a horizontal (flat top) fashion, it will tend to be bi-directional, meaning that it will transmit and receive equally well at 90 degrees (broadside) to the antenna and very little off each end.

SBARA's Groundplane

Build a 10 Meter Technician Class Dipole (cont'd.)

A more popular method of installing it is in the inverted V fashion which will yield you a more omni (all direction) pattern. You will have to compensate with the swr tuning using this method as it may be different from horizontal mounting.

For an inverted V, simply have the center higher than the ends, like an upside down V. Don't bring both ends together. Use about a 45 degree angle from the center insulator.

Performance:

The dipole has no gain compared to a yagi (beam) antenna. The dipole is used as a reference antenna for comparison of other types of antennas and is usually referenced as 0db gain or in technical terms 0dbd. The "d" at the right side of 0dbd represents the reference (dipole). It is a standard, basic antenna and the most widely used of all antenna types. **A reference to a dipole is much more realistic when comparing antennas.**

Until the 11 year sunspot cycle starts to climb, activity on 10 meters (DX) will be very difficult and limited. The band will be most active during the daylight hours (when it is "open"), but very good "local" contacts will be made using ground wave coverage anytime, so don't expect to set the world on fire until the 11 year cycle really starts to climb! Then the world will open up to you with stations from around the world.

When the sun spot cycle is at it's peak, it is very common to work around the world with 5 watts SSB using a 10 meter dipole!

More about dipoles!

A dipole antenna is a straight electrical conductor measuring 1/2 wavelength from end to end and connected at the center to a radio-frequency (RF) feed line that is connected to the transmitter/receiver. This antenna, also called a *doublet*, is one of the simplest and most basic types of antennas, and makes up the main RF radiating and receiving element in various sophisticated types of antennas. The dipole is inherently a balanced antenna, because it is bilaterally symmetrical or contains equal conductors on each side of the feed point.

Ideally, a dipole antenna is fed with a balanced, parallel-wire transmission line. However, this type of line is not extremely common and it's impedance does not match the output of most ham transceivers. It is extremely low loss however, and due to this fact, it is often used by hams and can be matched to most 50 ohm output radios. This is usually done with a matching transformer called a balun, which is a contraction of the words "balanced" and "unbalanced".

An unbalanced feed line, such as coaxial cable, can be used, but to ensure optimum RF current distribution on the antenna element and in the feed line, a *balun* should be inserted in the system at the point where the feed line joins the antenna.

SBARA's Groundplane

Build a 10 Meter Technician Class Dipole (cont'd.)

How high should it be in the air?

For best performance, a dipole antenna should be at least or more than 1/2 wavelength above the ground, the surface of a body of water, or other horizontal, conducting medium such as sheet metal roofing. The antenna should also be at least several wavelengths away from electrically conducting obstructions such as supporting towers, utility wires, guy wires, and other antennas. This is very difficult to do with most ham installations. to EM fields whose polarization is parallel to the orientation of the element. The RF current in a dipole is maximum at the center (the point where the feed line joins the element), and is minimum at the ends of the element. The RF voltage is maximum at the ends and is minimum at the center. The RF current portion of the antenna is where the maximum rf field is radiated.

Dipole antennas can be oriented horizontally, vertically, or at a slant. The polarization of the electromagnetic field (EM) radiated by a dipole transmitting antenna cor-

responds to the orientation of the element. This means that if the antenna is installed with it's wire horizontal to the ground, it radiates a horizontally polarized field. If it is installed in a vertical position, then it would be said to have a vertical polarized field in reference to the ground. When the antenna is used to receive RF signals, it is most sensitive to EM fields whose polarization is parallel to the orientation of the element. The RF current in a dipole is maximum at the center (the point where the feed line joins the element), and is minimum at the ends of the element. The RF voltage is maximum at the ends and is minimum at the center. The RF current portion of the antenna is where the maximum rf field is radiated.

To learn even more about antennas in general, it is highly recommended that you get a copy of the ARRL Antenna Book seen below!

Enjoy and welcome to the world of HF....73

ARRL Field Day Overview

ARRL Field Day is the single most popular on-the-air event held annually in the US and Canada. Each year over 35,000 amateurs gather with their clubs, friends or simply by themselves to operate.

It is an excellent opportunity to demonstrate Amateur Radio to local elected community leaders, key individuals with the organizations that Amateur Radio might serve in an emergency, as well as the general public. For many clubs, ARRL Field Day is one of the highlights of their annual calendar.



SBARA's Groundplane

ANAHEIM, CA

(Near Disneyland)
933 N. Euclid St., 92801
(714) 533-7373
(800) 854-6046
Janet, KL7MF, Mgr.
anaheim@hamradio.com

BURBANK, CA

1525 W. Magnolia Blvd, 91506
(818) 842-1786
(800) 854-6046
Eric, K6EJC, Mgr.
Magnolia between
S. Victory & Buena Vista
burbank@hamradio.com

OAKLAND, CA

2210 Livingston St., 94606
(510) 534-5757
(800) 854-6046
Mark, W17YN, Mgr.
I-880 at 23rd Ave. ramp
oakland@hamradio.com

SAN DIEGO, CA

5375 Kearny Villa Rd., 92123
(858) 560-4900
(800) 854-6046
Jose, XE2SJB, Mgr.
Hwy. 163 & Claremont Mesa
sandiego@hamradio.com

SUNNYVALE, CA

510 Lawrence Exp. #102, 94085
(408) 736-9496
(800) 854-6046
Jon, K6WV, Mgr.
So. from Hwy. 101
sunnyvale@hamradio.com

NEW CASTLE, DE

(Near Philadelphia)
1509 N. Dupont Hwy., 19720
(302) 322-7092
(800) 644-4476
Jim, KJ3N, Mgr.
RT.13 1/4 mi., So. I-295
newcastle@hamradio.com

PORTLAND, OR

11705 S.W. Pacific Hwy.
97223
(503) 598-0555
(800) 854-6046
Leon, W7AD, Mgr.
Tigard-99W exit
from Hwy. 5 & 217
portland@hamradio.com

DENVER, CO

8400 E. Iliff Ave. #9, 80231
(303) 745-7373
(800) 444-9476
John, W0IG, Mgr.
denver@hamradio.com

NEW LOCATION!

PHOENIX, AZ

10613 N. 43rd Ave, 85029
(602) 242-3515
(800) 444-9476
Gary, N7GJ, Mgr.
Corner of 43rd Ave & Peoria
phoenix@hamradio.com

ATLANTA, GA

6071 Buford Hwy., 30340
(770) 263-0700
(800) 444-7927
Mark, K4VO, Mgr.
Doraville, 1 mi. no. of I-285
atlanta@hamradio.com

WOODBIDGE, VA

(Near Washington D.C.)
14803 Build America Dr. 22191
(703) 643-1063
(800) 444-4799
Steve, W4SHG, Mgr.
Exit 161, I-95, So. to US 1
woodbridge@hamradio.com

SALEM, NH

(Near Boston)
224 N. Broadway, 03079
(603) 898-3750
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oakland@hamradio.com

SUNNYVALE, CA

510 Lawrence Exp. #102, 94085
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SBARA's Groundplane

South Bay Amateur Radio Association

Founded 1974

**Mailing Address
Box 8401**

Fremont, Ca. 94537-8401

Web Site — www.sbara.org

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Fremont Repeaters & Net Information

WA6PWW - 147.015 +600Khz, PL 103.5

WA6PWW - 223.900 -500Khz, PL 107.2

WA6PWW - 442.600 +5Mhz, PL 107.2

K6AIR - 146.940 -600Khz, PL 123.0

K6AIR - 441.525 +5Mhz, PL 123.0

ARES - Tuesday @ 7:30pm -

147.015 + PL 103.5

SBARA Meeting Location

Our meeting location is at

Hurricane Electric.

The address in Fremont is:

760 Mission Court — Come to the meeting.

Bring your HF transceiver, antenna) or HT !

Talk-In 147.015Mhz. +600

Also consider joining us at Wok City Diner
for Dinner at 6PM

Mingle with your fellow SBARA members

The **South Bay Amateur Radio Association** is a general interest amateur radio club serving the Fremont Tri-City area. The club has been in existence since 1974, and has functioned continuously ever since. We are an ARRL Special Service Club, a California not-for-profit tax exempt organization as specified in IRS Stat-

utes. We sponsor training for new hams, license examination sessions, and participate in various public service events. If you have a specialized amateur radio interest, chances are you can share it with one or more of our club members.

SBARA meets on the 2nd Friday of every month at Hurricane Electric in Fre-

mont, California. The meeting begins at 7:30 PM. After conducting business, coffee and snacks are served while we socialize. Following the break, a program of interest will be presented. All persons interested in amateur radio are invited to attend. Families are welcome. We hope to see you there!

Announcements

**SBARA's May meeting is the 14th.
Our meeting location is at
Hurricane Electric. The address in
Fremont is:**

760 Mission Court Fremont, Ca.

**Come to the meeting and
bring your;
Go Pack, HF Rig, HT, and
Antennas!!**



**The Ground Plane — KU6S
<http://www.sbara.org>
South Bay Amateur Radio Association —
SBARA
P.O. Box 8401**